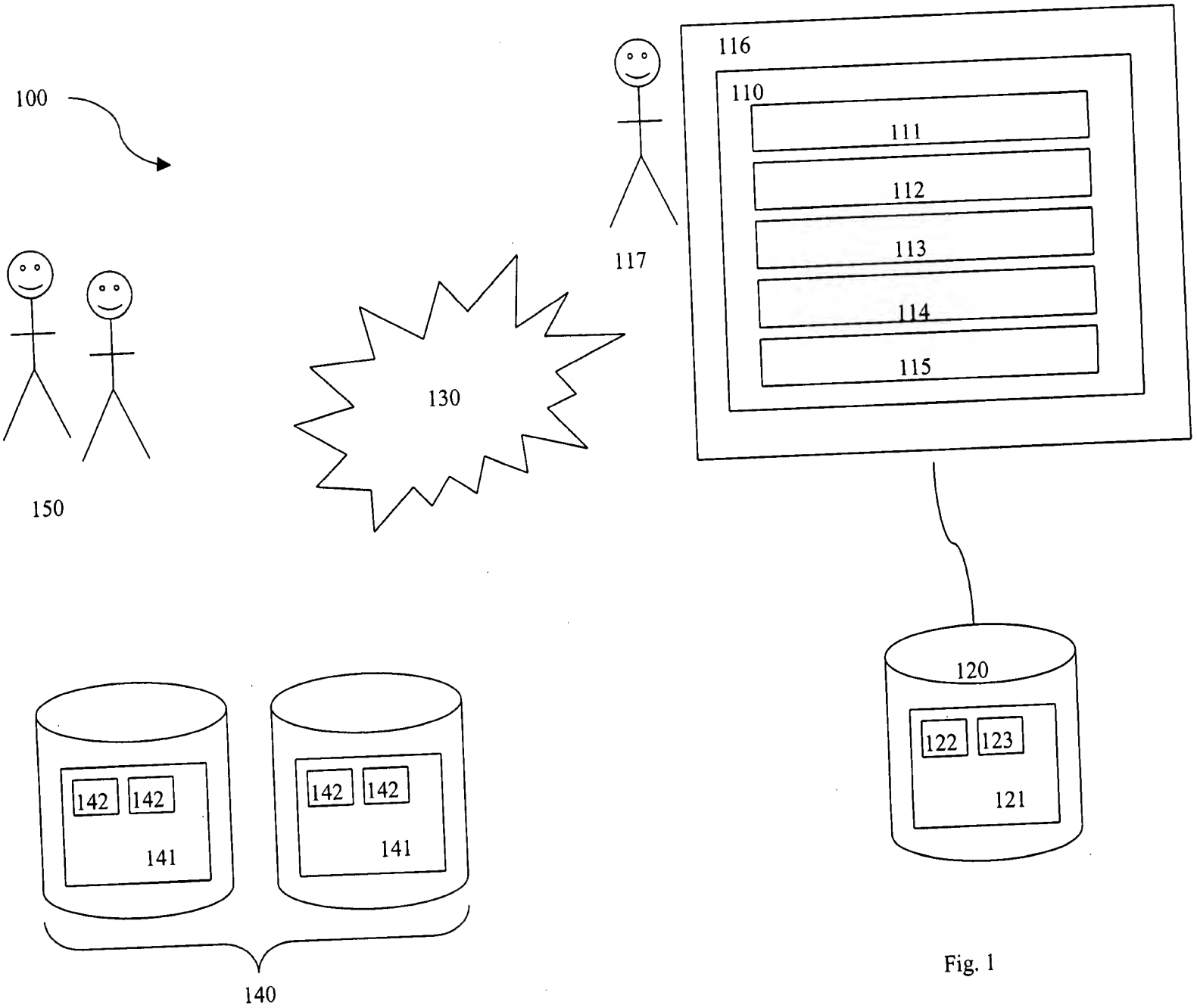

Fig. 1

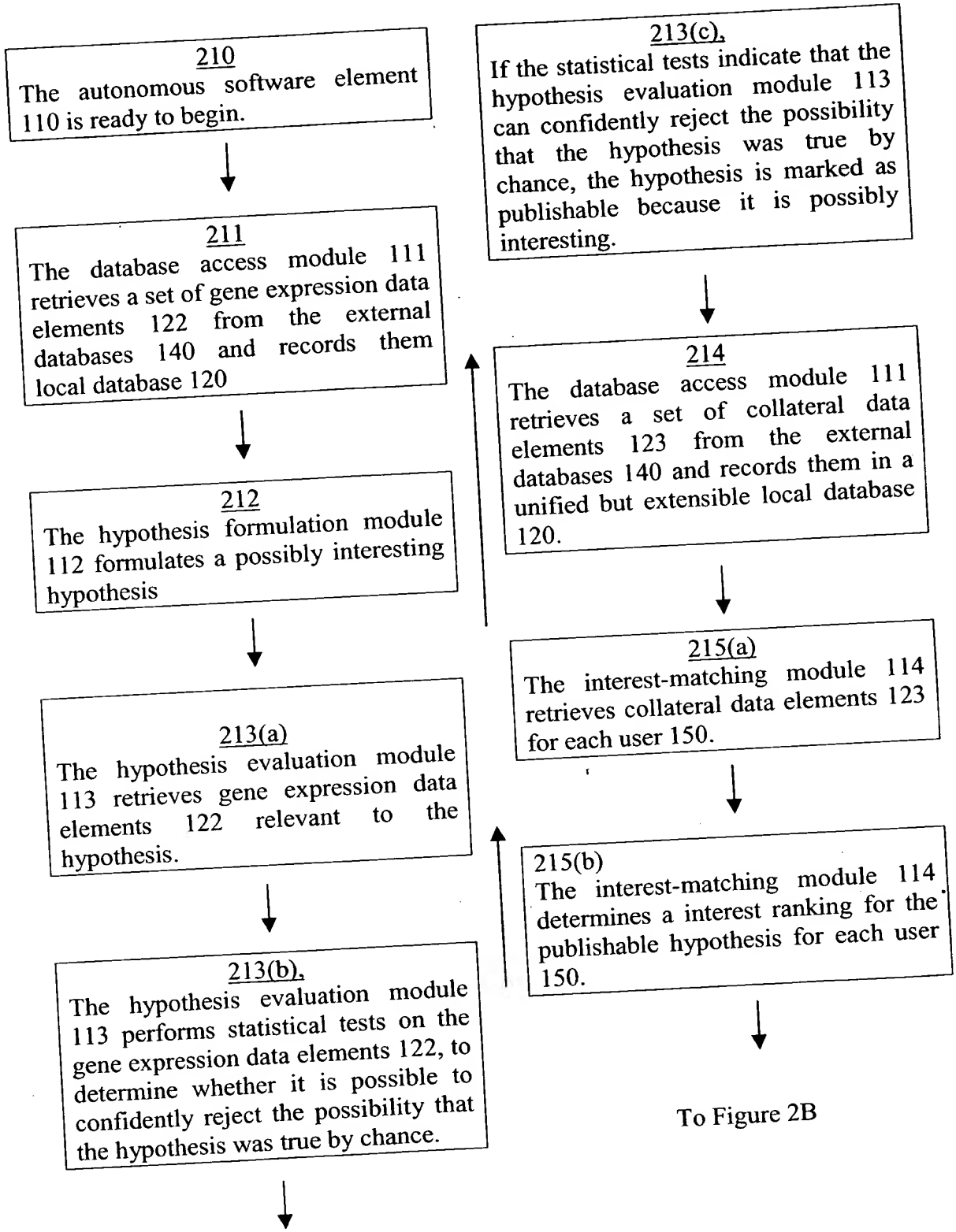
210
The autonomous software element 110 is ready to begin.
211
The database access module 111 retrieves a set of gene expression data elements 122 from the external databases 140 and records them local database 120
212
The hypothesis formulation module 112 formulates a possibly interesting hypothesis
213(a)
The hypothesis evaluation module 113 retrieves gene expression data elements 122 relevant to the hypothesis.
213(b),
The hypothesis evaluation module 113 performs statistical tests on the gene expression data elements 122, to determine whether it is possible to confidently reject the possibility that the hypothesis was true by chance.
213(c),
If the statistical tests indicate that the hypothesis evaluation module 113 can confidently reject the possibility that the hypothesis was true by chance, the hypothesis is marked as publishable because it is possibly interesting.
214
The database access module 111 retrieves a set of collateral data elements 123 from the external databases 140 and records them in a unified but extensible local database 120.
215(a)
The interest-matching module 114 retrieves collateral data elements 123 for each user 150.
215(b)
The interest-matching module 114 determines a interest ranking for the publishable hypothesis for each user 150.
To Figure 2B

FIG. 2A

215(c)

If the statistical tests indicate that the hypothesis evaluation module 113 can confidently reject the possibility that the hypothesis was true by chance, the hypothesis is marked as publishable and possibly "interesting."

216

The publication module 115 generates a publication regarding the publishable hypothesis. The publication can include a database or other data file in a specified format, an HTML (hypertext markup language) page, or an email message.

220

The autonomous software element 110 has completed one cycle of finding and publishing a publishable hypothesis. The method 200 continues with the flow point 210, unless interrupted by the operator 117.

FIG. 2B